Amendments to the Claims:

All of the claims are set forth herein with the current status of each noted and the currently amended claims showing the changes made therein. This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Original): A digitally aberration corrected holographic Fourier transform spectrometer, comprising:

an optical interferometer having an input and an output and having first and second mirrors for directing a light beam received at said input along a path between the input and the output;

a beamsplitter in said path located to divide said light beam into first and second beams traveling in opposite directions along a portion of said path including said first and second mirrors, said beams being directed at said output by said beamsplitter;

said first and second mirrors being displaced to shift said first and second beams to produce two virtual images;

optical means in said interferometer for recombining said beams at a location outside of said interferometer;

a detector at said location for receiving said recombined beams and detecting interference between said beams; and

means connected to said detector for digitally correcting aberrations in interference patterns produced at said detector by said beams.

2. (Original): The spectrometer of claim 1, wherein said optical means are cylindrical lenses at said input and output on said interferometer.

3. (Original): The spectrometer of claim 2, wherein said cylindrical lenses each have a focal line intersecting the said path at a right angle.

4. (Original): The spectrometer of claim 1, wherein said optical means are spherical lenses at said input and said output on said interferometer.

5. (Original): The spectrometer of claim 1, wherein said interferometer comprises first and second Littrow prisms, said input being a surface of said first prism and said output being a surface of said second prism.

6. (Original): The spectrometer of claim 1, wherein said optical means are first and second parabolic mirrors at said input and said output.

7. (Previously amended): The spectroscope of claim 6, wherein said beamsplitter is a first polarizer combined with a second polarizer before said detector.

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)